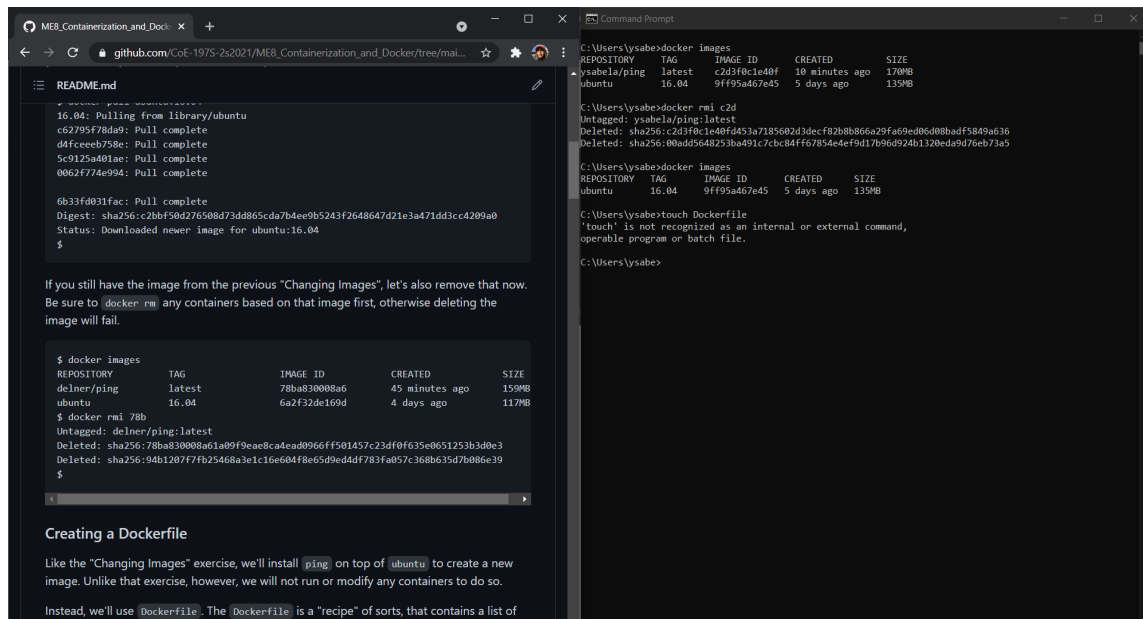


## CoE 197 ME8 Exercise 3

CORONEL, Ysabela Louise O.

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The screenshot shows a web browser window displaying a Docker tutorial page. The page content includes instructions on pulling images from a library, removing old images, and creating a Dockerfile. The Command Prompt window on the right shows the following commands and output:

```
C:\Users\ysabex>docker images
REPOSITORY TAG IMAGE ID CREATED SIZE
ysabela/ping latest c2d3f8c1e40f 10 minutes ago 170MB
ubuntu 16.04 9ff95a467e45 5 days ago 135MB

C:\Users\ysabex>docker rmi c2d
Untagged: ysabela/ping:latest
Deleted: sha256:c2d3f8c1e40fd453a7185602d3decf82b8b866a29fa69ed06d08badf5849a636
Deleted: sha256:0badd5648253ba491c7cbc84ff67854e4ef9d17b96d924b1320eda9d76eb73a5

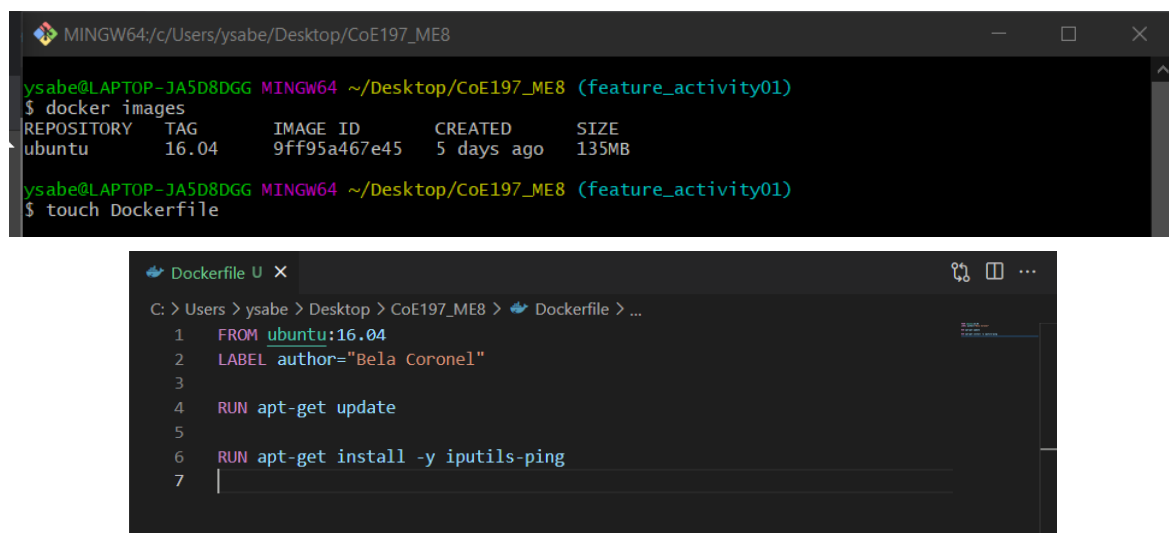
C:\Users\ysabex>docker images
REPOSITORY TAG IMAGE ID CREATED SIZE
ubuntu 16.04 9ff95a467e45 5 days ago 135MB

C:\Users\ysabex>touch Dockerfile
'touch' is not recognized as an internal or external command,
operable program or batch file.

C:\Users\ysabex>
```

In this first image, the setup part of the exercise was executed. The modified image produced from exercise 2 was removed.

Step 1 of the 'Creating a Dockerfile' part of the exercise was also attempted but the command was not recognized by the command line so I had to switch to the Git Bash shell.



The screenshot shows a Git Bash terminal window with the following commands and output:

```
ysabe@LAPTOP-JA5D8DGG MINGW64 ~/Desktop/CoE197_ME8 (feature_activity01)
$ docker images
REPOSITORY TAG IMAGE ID CREATED SIZE
ubuntu 16.04 9ff95a467e45 5 days ago 135MB

ysabe@LAPTOP-JA5D8DGG MINGW64 ~/Desktop/CoE197_ME8 (feature_activity01)
$ touch Dockerfile
```

The Dockerfile editor window shows the following content:

```
1 FROM ubuntu:16.04
2 LABEL author="Bela Coronel"
3
4 RUN apt-get update
5
6 RUN apt-get install -y iputils-ping
7 |
```

The 2 images above show how the Dockerfile was created and what it includes.

```
MINGW64/C:/Users/ysabe/Desktop/CoE197_ME8
ysabe@LAPTOP-JA5D8DGG MINGW64 ~/Desktop/CoE197_ME8 (feature_activity01)
$ docker build -t 'ysabela/ping'
#1 [internal] load build definition from Dockerfile
#1 sha256:b467f9a5b89e6f2b8e273e6890cda3e4e6b9a90ebec30771e76b38e710c36
#1 transferring dockerfile: 1468 0.0s done
#1 DONE 0.1s

#2 [internal] load .dockerignore
#2 sha256:8db08a2b276f4c09e1b567a7565dbd7386b466f9455f5a52f079e5ea32700
#2 transferring context: 28 done
#2 DONE 0.0s

#3 [internal] load metadata for docker.io/library/ubuntu:16.04
#3 sha256:8dff2c23d5907ba94f7c361d130cc16c98c9f3ad54aalc116e150ea96355a327
#3 DONE 0.0s

#6 [1/3] FROM docker.io/library/ubuntu:16.04
#6 sha256:04187b885604d112762d7171a1346cbc4f17e131fc82857a048019e04951455
#6 DONE 0.0s

#4 [2/3] RUN apt-get update
#4 sha256:d85b94c23f2207314e65c2b65f8174fe8e9f9a171cdda392eb5b3a6093800fe1
#4 0.992 get:1 http://archive.ubuntu.com/ubuntu xenial InRelease [247 kB]
#4 0.992 get:2 http://security.ubuntu.com/ubuntu xenial-security InRelease [109 kB]
#4 1.995 get:3 http://security.ubuntu.com/ubuntu xenial-security/main amd64 Packages [2051 kB]
#4 2.308 get:4 http://archive.ubuntu.com/ubuntu xenial-updates InRelease [109 kB]
#4 2.779 get:5 http://archive.ubuntu.com/ubuntu xenial-backports InRelease [107 kB]
#4 3.036 get:6 http://archive.ubuntu.com/ubuntu xenial/main amd64 Packages [1558 kB]
#4 8.239 get:7 http://archive.ubuntu.com/ubuntu xenial/restricted amd64 Packages [14.1 kB]
#4 8.302 get:8 http://archive.ubuntu.com/ubuntu xenial/universe amd64 Packages [9827 kB]
#4 9.737 get:9 http://security.ubuntu.com/ubuntu xenial-security/restricted amd64 Packages [15.9 kB]
#4 9.786 get:10 http://security.ubuntu.com/ubuntu xenial-security/universe amd64 Packages [984 kB]
#4 13.17 get:11 http://security.ubuntu.com/ubuntu xenial-security/multiverse amd64 Packages [8820 B]
#4 41.45 get:12 http://archive.ubuntu.com/ubuntu xenial/multiverse amd64 Packages [176 kB]
#4 42.04 get:13 http://archive.ubuntu.com/ubuntu xenial-updates/main amd64 Packages [2959 kB]
#4 50.44 get:14 http://archive.ubuntu.com/ubuntu xenial-updates/restricted amd64 Packages [16.4 kB]
#4 50.48 get:15 http://archive.ubuntu.com/ubuntu xenial-updates/universe amd64 Packages [1544 kB]
#4 55.97 get:16 http://archive.ubuntu.com/ubuntu xenial-updates/multiverse amd64 Packages [26.2 kB]
#4 56.05 get:17 http://archive.ubuntu.com/ubuntu xenial-backports/main amd64 Packages [10.9 kB]
#4 56.08 get:18 http://archive.ubuntu.com/ubuntu xenial-backports/universe amd64 Packages [12.7 kB]
#4 56.13 Fetched 19.4 MB in 55s (347 kB/s)
#4 56.13 Reading package lists...
#4 DONE 57.6s

#5 [3/3] RUN apt-get install -y iputils-ping
#5 sha256:ec62f1a6cd6e472dbc3eacc6090a5dab9f4238a7ac3f70463e9f1220cab3d62
#5 0.401 Reading package lists...
#5 1.670 Building dependency tree...
#5 1.920 Reading state information...
#5 2.268 The following additional packages will be installed:
#5 2.268 libffi6 libgmp10 libgnutls-openssl127 libgnutls30 libhogweed4 libidn11
#5 2.270 libnettle6 libp11-kit0 libtasn1-6
#5 2.273 suggested packages:
#5 2.273 gnutls-bin
#5 2.275 The following NEW packages will be installed:
#5 2.276 iputils-ping libffi6 libgmp10 libgnutls-openssl127 libgnutls30 libhogweed4
#5 2.278 libidn11 libnettle6 libp11-kit0 libtasn1-6

MINGW64/C:/Users/ysabe/Desktop/CoE197_ME8
ysabe@LAPTOP-JA5D8DGG MINGW64 ~/Desktop/CoE197_ME8 (feature_activity01)
#7 sha256:e8c013e07b0b7ff33893b694f7759a10d42e180f2b4dc349fb57dc6b71dcab00
#7 exporting layers
#7 exporting layers 0.2s done
#7 writing image sha256:6afcc07942605e93157e57de1a6114113dcl4a5338a1f5d3b6a6da2082e85469 done
#7 naming to docker.io/ysabela/ping done
#7 DONE 0.2s

Use 'docker scan' to run Snyk tests against images to find vulnerabilities and learn how to fix them

ysabe@LAPTOP-JA5D8DGG MINGW64 ~/Desktop/CoE197_ME8 (feature_activity01)
$ docker build -t 'ysabela/ping' .
#1 [internal] load build definition from Dockerfile
#1 sha256:fdb36391c99b47437c073a0f17cacb15c8ca560e8e52ebb4c8370b4e221a516
#1 DONE 0.0s

#1 [internal] load build definition from Dockerfile
#1 sha256:fdb36391c99b47437c073a0f17cacb15c8ca560e8e52ebb4c8370b4e221a516
#1 transferring dockerfile: 318 done
#1 DONE 0.0s

#2 [internal] load .dockerignore
#2 sha256:f959fa25f307021eb6fa4d21bd3a1db2a17a94fdb3e0aba140e2638b3b0a946d
#2 transferring context: 28 done
#2 DONE 0.0s

#3 [internal] load metadata for docker.io/library/ubuntu:16.04
#3 sha256:8dff2c23d5907ba94f7c361d130cc16c98c9f3ad54aalc116e150ea96355a327
#3 DONE 0.0s

#6 [1/3] FROM docker.io/library/ubuntu:16.04
#6 sha256:04187b885604d112762d7171a1346cbc4f17e131fc82857a048019e04951455
#6 DONE 0.0s

#4 [2/3] RUN apt-get update
#4 sha256:d85b94c23f2207314e65c2b65f8174fe8e9f9a171cdda392eb5b3a6093800fe1
#4 CACHED

#5 [3/3] RUN apt-get install -y iputils-ping
#5 sha256:ec62f1a6cd6e472dbc3eacc6090a5dab9f4238a7ac3f70463e9f1220cab3d62
#5 CACHED

#7 exporting to image
#7 sha256:e8c013e07b0b7ff33893b694f7759a10d42e180f2b4dc349fb57dc6b71dcab00
#7 exporting layers done
#7 writing image sha256:6afcc07942605e93157e57de1a6114113dcl4a5338a1f5d3b6a6da2082e85469 done
#7 naming to docker.io/ysabela/ping done
#7 DONE 0.0s

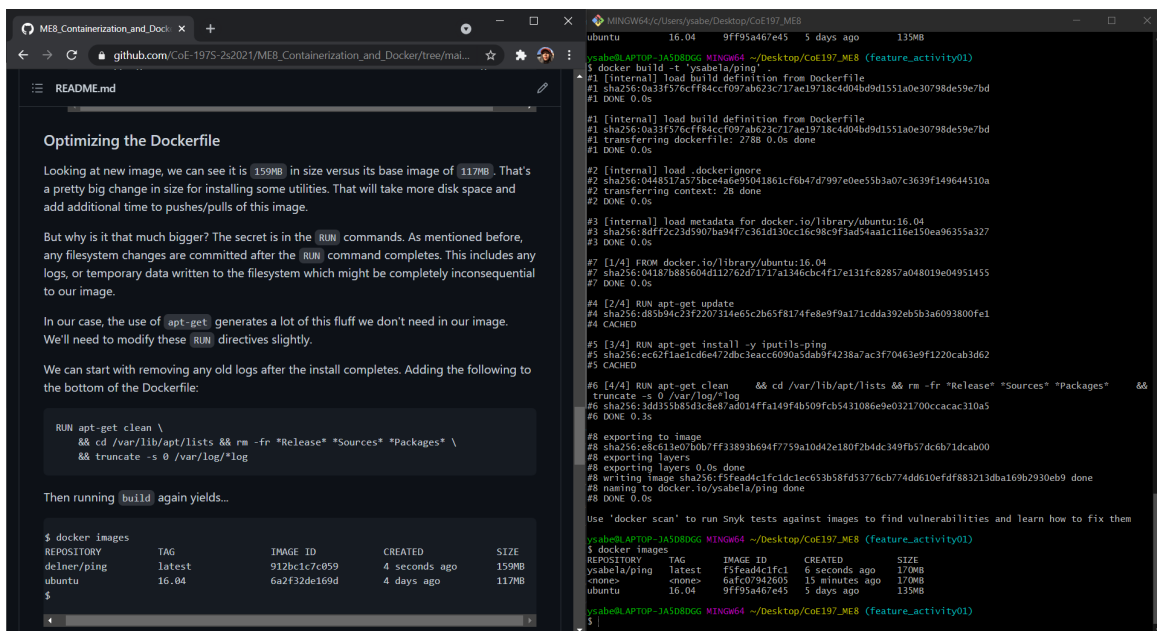
Use 'docker scan' to run Snyk tests against images to find vulnerabilities and learn how to fix them

ysabe@LAPTOP-JA5D8DGG MINGW64 ~/Desktop/CoE197_ME8 (feature_activity01)
$ docker images
REPOSITORY TAG IMAGE ID CREATED SIZE
ysabela/ping latest 6afcc07942605 11 minutes ago 170MB
ubuntu 16.04 9ff95a467e45 5 days ago 135MB
```

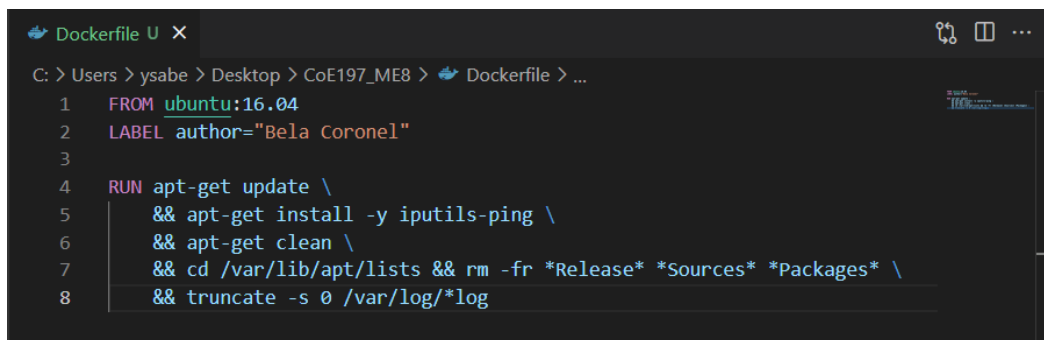
The output of the docker build command was longer than expected but the expected output image was still attained as seen in the docker images.

```
Dockerfile U X
C: > Users > ysabe > Desktop > CoE197_ME8 > Dockerfile > ...
1 FROM ubuntu:16.04
2 LABEL author="Bela Coronel"
3
4 RUN apt-get update
5
6 RUN apt-get install -y iputils-ping
7
8 RUN apt-get clean \
9     && cd /var/lib/apt/lists && rm -fr *Release* *Sources* *Packages* \
10    && truncate -s 0 /var/log/*log
```

To optimize the Dockerfile, the file was modified as shown above.



The docker build command was executed again and upon looking at the result of the docker images command, the expected output is attained. However, another image appeared with the tag <none> and repository name <none>.



Since no improvement was seen, the dockerfile was modified again as shown above.

```
FROM ubuntu:16.04
LABEL author="David Elner"

RUN apt-get update \
    && apt-get install -y iputils-ping \
    && apt-get clean \
    && cd /var/lib/apt/lists && rm -fr *Release* *Sources* *Packages* \
    && truncate -s 0 /var/log/*log

Then after rerunning build, our images now like:
```

| REPOSITORY  | TAG    | IMAGE ID     | CREATED        | SIZE  |
|-------------|--------|--------------|----------------|-------|
| delner/ping | latest | 622e555950e0 | 12 seconds ago | 121MB |
| ubuntu      | 16.04  | 6a2f32dc169d | 4 days ago     | 117MB |

Upon running the modified dockerfile, 170MB was reduced to 139MB which is a major improvement. Again, same with the output a while ago, another image with the tag and repository name “<none>” appeared.

```
FROM ubuntu:16.04
LABEL author="Bela Coronel"

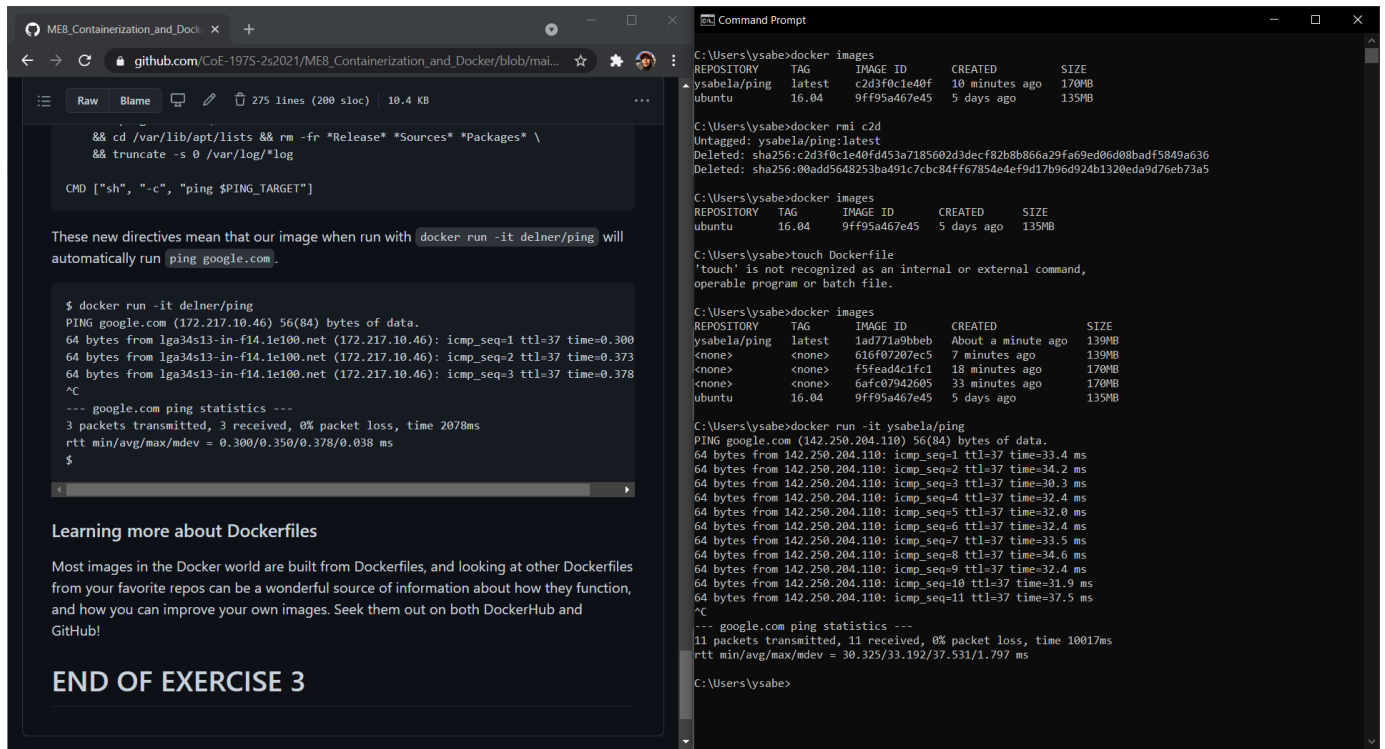
ENV PING_TARGET "google.com"

RUN apt-get update \
    && apt-get install -y iputils-ping \
    && apt-get clean \
    && cd /var/lib/apt/lists && rm -fr *Release* *Sources* *Packages* \
    && truncate -s 0 /var/log/*log

CMD ["sh", "-c", "ping $PING_TARGET"]
```

To automatically run the ping command, the dockerfile was modified again as shown above.

```
ysabe@LAPTOP-JA5D8DGG MINGW64 ~/Desktop/CoE197_ME8 (feature_activity01)
$ docker run -it ysabela/ping
the input device is not a TTY. If you are using mintty, try prefixing the command with 'winpty'
```



For some reason, when I tried to run the docker run -it command on the git bash shell, an error occurred as seen in the first image above. So, to run the command, I went back to the command line shell. As you can see, the dockerfile runs perfectly.